MOUNTABLE SECURING MECHANISM FOR LACE TYPE FOOTGEAR AND METHOD OF USING THEREOF

This application claims priority under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/447,983, filed February 18, 2003, which application is hereby incorporated by reference herein.

FIELD OF THE INVENTION

This invention relates to a mountable securing mechanism, which can be engaged onto various lace types of footgear with temporary affixed fastening members.

BACKGROUND OF THE INVENTION

All footgear, especially lace-type footgear, requires a firm tight fit to function properly, this is particularly true in sports-related footwear where the gear has a tendency to loosen or become ill-fitted, resulting in a participant's foot sliding around within the given shoe or boot. This can cause a variety of medical problems ranging from minor surface sores or calluses to severe ligament strains and even bone deformities such as shin-splints. Further, when an attachment is made to the shoe or boot - e.g., skis, blades, or wheels - any movement of the foot within the shoe or boot results in a loss of force transfer between the foot and the attachment resulting in a reduction in mobility and control.

This issue raises greater problems in children. Children typically either do not possess the requisite dexterity and ability to lace up footwear or are unwilling to take the necessary time to properly lace and secure the footwear, which in turn results in improperly laced or tightened footwear, causing an increased chance of loosening of foot and more importantly injury.

Over the years many different strategies have been employed to eliminate the need for lace type footgear and provide foot apparel that can be easily and securely engaged. Such examples include buckle type mechanisms, and Velcro® closures to name a few. The problem however is that new footgear must be purchased to ensure a secure and

easily engageable closure, causing the consumer to purchase yet another pair of footgear, resulting in an expensive alternative.

SUMMARY OF THE INVENTION

Accordingly, there exists a need for a securing or engaging mechanism that can be appropriately fastened to an existing lace footgear, while allowing for easy engagement and disengagement, particularly for individuals with limited dexterity. As such, the objective of the present invention is to produce a means for securing, using an alternative temporarily mountable device, which makes it possible for lace type foot apparel or gear to be converted to foot apparel which allows for easier engagement and disengagement. Therefore, a major feature of the securing mechanism, according to the invention is a means for temporarily mounting onto a variety of different types of foot apparel to facilitate an alternative fastening engagement and disengagement. The present invention is based on known securing devices, however offers a novel means of using these devices and moreover, allows for a temporary secure alternative fastening means to already existing footwear, which in turn is cost effective to the consumer.

Still another objective of the present invention is to provide such a mountable securing device for engagement and disengagement using the existing lace holes of a boot or shoe facilitating an appropriately tight and secure assembly of the gear onto the foot, which allows an individual having limited hand strength and dexterity to quickly and easily engage and disengage from a lace type footgear without having to physically lace the gear.

The mountable securing device of the present invention includes multiple alternative fastening means which are fashioned to be securely and temporarily affixed onto the preexisting laced holes on a lace type boot or shoe. The discussion of the present invention focuses on at least three different securing embodiment, which allow for a secure temporary attachment facilitating an alternative and easier means for engagement and disengagement of an existing lace type footgear. It should be understood however that the present invention is not limited to only these securing devices discussed, but instead allows for any type of securing engagement, which can benefit from this type of temporary mounting.

Moreover, although this discussion focuses on use of the present invention with a lace type boot or shoe, any similar lace type foot apparel that requires a secure, tight fit may benefit through the present invention. Also, for purposes of illustration, the present invention is discussed in terms of lace holes which exist on lace foot apparel; however, it should be understood that the temporarily mountable securing device discussed in the present invention, is not intended to be limited to use with only lace holes, but instead can be temporarily mounted onto any type of footwear or other object which can benefit from the use of a secure and easy engaging and disengagement mechanism so long as the fastening means can be properly and securely affixed.

The invention may be utilized in a variety of ways including, but not limited to, placement on downhill ski-boots, roller-skates, in-line skates, ice-skates, athletics footgear and any other kind of lace type footgear.

It is to be understood that other objects and advantages of the present invention will be made apparent by the following description of the drawings according to the present invention. While a preferred embodiment is disclosed, this is not intended to be limiting. Rather, the general principles set forth herein are considered merely illustrative of the scope of the present invention and it is to be further understood that numerous changes may be made without straying from the scope of the present invention. These and other features and advantages of the present invention will be apparent from the following detailed description, in conjunction with the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The benefits and advantages of the present invention will become more readily apparent to those of ordinary skill in the relevant art after reviewing the following detailed description and accompanying drawings, wherein:

FIG. 1 is a cross section of the footgear with the mountable securing mechanism.

FIG. 2 is a perspective view of the mountable buckle device when used on a lace-type boot.

FIG. 3 is a perspective view of the mountable buckle device in a partially opened position.

FIG. 4 is a perspective view of the mountable buckle device in fully closed position.

FIG. 5 is a perspective view of the mountable engagement device similar to FIG. 1 and illustrating an alternative embodiment of the present invention.

FIG. 6 is a perspective view of the mountable engagement device similar to FIG. 2 and illustrating another alternative embodiment of the present invention.

FIG. 7 is a cross section of the footgear outlining an alternative securing mechanism.

FIG. 8 is a perspective view of the mountable engagement device similar to FIG. 2 and 6 and illustrating yet another alternative embodiment of the present invention.

DESCRIPTION OF THE DRAWINGS

While the present invention is susceptible of embodiment in various forms, there is shown in the drawings and will hereinafter be described a presently preferred embodiment with the understanding that the present disclosure is to be considered an exemplification of the invention and is not intended to limit the invention to the specific embodiment illustrated. It should be further understood that the title of this section of this specification, namely, "Detailed Description Of The Invention," relates to a requirement of the United States Patent Office, and does not imply, nor should be inferred to limit the subject matter disclosed herein.

In the present disclosure, the words "a" or "an" are to be taken to include both the singular and the plural. Conversely, any reference to plural items shall, where appropriate, include the singular.

Referring now to the Figures, and in particular to FIG. 1, which illustrates a cross section of the footgear outlining the mountable securing device **2** in connection with the footgear **4**. In particular, the drawing shows a buckle type securing mechanism **2**, a first preferred embodiment of the present invention, in connection with two opposing portions of a footwear surface, having a plurality of openings, defined here as the lace openings **8**

and **10**. Whereby said surfaces have a front **4a** and back side **4b**. Although the present invention focuses particularly on the lace openings **8** and **10** as the specific surface of connection to the particular securing device, a surface of any type on the foot apparel or gear **4**, which enables securement of the securing device **2** onto the footgear **4** can be used.

The key element of the securing mechanism **2** is best show in FIG. 1. Specifically, the securing mechanism **2** becomes affixed onto an existing footgear **4**, by engaging temporarily as well as securely onto the opposing lace openings of the footgear **8** and **10**, through the use of a fastening assembly **6**. The buckle securing device **2**, encompasses a base plate **12** having a relatively long and rectangular bowed or rounded shape conforming to the shape of the apparel **4** to allow the base plate **12** and footgear **4** to abut. The base plate assembly **12** has complementary openings to that of the lace opening **8** and **10** to further facilitate engagement through the use of fastening assembly **6,** further defined by a housing member **6a** adapted to fit complementary to the back surface **4b** of said footwear surface **4**, and a engaging device **6b** adapted to fit complementary to the front surface **4a** of said footwear surface **4**. Many various fastening means **6** can be applied to the present invention such as for example: rivets, pins, screws, hooks or any other suitable method can be utilized for affixing the buckle mechanism and can include adhesion, plastic rivet, stitching and the like. One fastening means **6** embodiment is particularly illustrated in FIG. 1 and depicts a nut and screw combination whereby said nut **30** is inserted though the back portion of said lace openings **8** and **10** providing for the receiving screw, rivet or pin **34.** The fastening means **6**, and in particular the nut and screw combination of the first embodiment enables the resulting in a firm and secure mounting of a base plate assembly **12** on the buckle securing device **34**. The base plate **12** further includes a toothed strap **14** having saw type teeth, and a spring loaded pawl **16** mounted between the base plate **12** and held in position with a round pin **13.** The pawl **16** works in cooperation with the toothed strap **14** and facilitates the adjustment, increasing or decreasing the span between the opposing lace holes **8** and **10** of the footgear **4**, which positively engages the toothed strap **14** to the base plate **12.**

Once securely affixed onto the footgear, the buckle type securing device **2** easily engages and disengages by a pivotable motion. The pivotable motion is best illustrated in FIGs. 3 and 4, which shows with arrows, the direction of movement resulting in the tightening or loosening between lace openings **8** and **10.** Specifically, the engagement and disengagement of the buckle type securing device is enabled by the rotational movement and the relationship between the pawl **16**, the tension spring **17** and toothed strap **14,** all working in cooperation. The consistent pressure of the pawl **16** to the toothed strap **14** will maintain the base plate **12** in a desired, fixed and secure position. The hinged, toothed tensioning lever **18** is connected between the base plate and pivots around the lever pin **19.** The tensioning lever **18** receives the cable loop **20** in one of the hook shaped teeth. With a forward pressing motion down on the tensioning lever **18** the final clamping is complete and the securing mechanism is fully engaged and locked as shown in FIG 4.

The second embodiment of the present invention is illustrated in FIGs. 5 and 6. As in the previous embodiment the securing device is affixed to the footgear through the use of the fastening means **6**, which in cooperation with the securing device and footgear provide a secure and temporarily mountable alternative engaging and disengaging device. In this particular embodiment, the securing device **2** is a strap-type engagement which includes one continuous strap **24** having a means of engagement on its outer surface **26** and inner surface **26a** which join each other to facilitate securement of the strap **24** when overlapped. The engaging surfaces of the strap **26** and **26a** may consist of a variety of materials which when joined together provide a secure engagement, such as for example Velcor ® or adhesive. The fastening means **6** as illustrated in FIG. 5 and 6 depict a typical nut and screw combination however as stated previously a variety of different fasteners can be utilized so long as they facilitate secure engagement such as for example: rivets, pins, screws, hooks or any other suitable method can be utilized for affixing the buckle mechanism and can include adhesion, plastic rivet, stitching and the like. Particularly, as shown in FIG. 5 the means for fastening **6** includes a nut **30** is inserted though the back portion of said lace openings **8** and **10** providing for the receiving screw, rivet or pin **34.**

The fastening means **6**, and in particular the nut and screw combination of the second embodiment enables the resulting in a firm and secure mounting of the strap type securing device to the footgear 4.

The engagement of the securing mechanism is realized by bringing the strap **24** through the receiving loop **28**, firmly pulling the strap **24** which will bring forth tensioning between lace openings **8** & **10.** Engaging the surfaces of **26** & **26a** by joining them together, will maintain the tension between lace openings **8** & **10** and result in a secure condition.

The third embodiment of the present invention is best illustrated in FIG. 7 & 8. In this particular embodiment, the securing mechanism **2** consists of two primary components affixed to the footgear **4.** A hook **32** is attached to the top part of the footgear **4** utilizing the existing lace holes on the surface of the footgear **4.** A screw, rivet or pin **34** is inserted through the bottom of the lace openings **8** & **10** firmly securing the hook **32** to the footgear. The hooks **32** could be used in place of all or part of the existing lace holes. A standard shoelace is used to tighten together the opposing ends of the footgear **4.**